



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/565,803

01/25/2006

Tomohiro Kawasaki

074090049

9702

22852

7590

12/31/2009

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP

901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

MOORE, WALTER A

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/31/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,803	Applicant(s) KAWASAKI ET AL.	
	Examiner WALTER MOORE	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11162009</u> . | 6) <input type="checkbox"/> Other: _____ |

RESPONSE TO AMENDMENT

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 November 2009 has been entered.

Claims 1-2, 4-13 are currently pending. Claim 1 was amended, claim 3 was canceled, and new claim 13 was added in the amendment filed on 16 November 2009.

Election/Restrictions

2. Newly submitted claim 13 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The claims are directed to two distinct groups of claims. Group I, claims 1-2 and 4-12, drawn to an insulated glass unit comprising a thermoplastic resin. Group II, claim 13, drawn to a method of making an insulated glass unit. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different

Art Unit: 1794

process, such as mixing a liquid thermoplastic resin, the rubber, and the moisture absorbent then extruding the composition into the insulated glass unit.

Additionally, this application is a national stage entry of an international application. As such the unity of invention rules apply. Evidence of lack of unity between the groups is found in Koizumi et al., USPN 6,491,992, wherein it is found to disclose the features of instant claim 1. As such, the special technical features of the claimed invention are not found to define a contribution over the prior art. See 35 USC 102 rejections of claims 1-2 and 4-12 below.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 13 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Specification

3. The disclosure is objected to because the paragraph numbers include more than one paragraph of text. “[T]he paragraphs of the specification . . . should be individually and consecutively numbered using Arabic numerals, so as to unambiguously identify each paragraph”. Additionally, a “gap, equivalent to approximately four spaces, should follow the number”. 37 CFR 1.52. Appropriate correction is required.

Rejections

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

5. Claims 1-2, 4-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the meaning “thermoplastic resin” in line 12 is unclear. Claim 1 claims “A thermoplastic resin composition consisting essentially of a thermoplastic resin” and additional components. In line 12 claim 1 claims a ratio of thermoplastic resin to rubber. However, it is unclear whether the ratio refers to the thermoplastic resin composition as a whole or the thermoplastic resin with the moisture vapor permeability (line 3). The ratio of the moisture absorbent to the thermoplastic resin (claim 1, ln. 15) is unclear for the same reason.

Claim 1 and 4-12 are indefinite for claiming the invention in terms of physical properties rather than the chemical or structural features that produce said properties. Ex parte Slob, 157 USPQ 172, states, “Claims merely setting forth physical characteristics desired in an article, and not setting forth specific composition which would meet such characteristics, are invalid as vague, indefinite, and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in the future and which would impart said desired characteristics.” Also, “it is necessary that the product be described with sufficient particularity that it can be identified so that one can determine what will and will not infringe.” Benger Labs, Ltd v. R.K. Laros Co., 135 USPQ 11, In re Bridgeford 149 USPQ 55, Locklin et al. v. Switzer Bros., Inc., 131 USPQ 294. Furthermore, “Reciting the physical and chemical characteristics of the claimed product will not suffice where it is not certain that a sufficient number of characteristics have been recited that the claim reads only on the particular compound

Art Unit: 1794

which applicant has invented.” Ex parte Siddiqui, 156 USPQ 426, Ex parte Davission et al., 133 USPQ 400, Ex parte Fox, 128 USPQ 157. Here, claim 1 recites a thermoplastic resin having a certain moisture vapor permeability property. However, claim 1 fails to identify what thermoplastic resin, out of the thousands of possible thermoplastic resins, have the claimed property.

Claim 1 is indefinite because the range of moisture absorbent is unclear. Claim 1 claims the moisture absorbent is between “10 to 70 parts by weight to 100 parts by weight of the total”. Therefore, it is unclear whether the range is between 10 to 70 parts, 10 to 100 parts, or 70 to 100 parts.

Claim 2 claims the thermoplastic resin "comprises at least one kind selected from the group”. However, the claim does not indicate what the term “kind” is modifying. It could mean a kind of thermoplastic or a kind of rubber. Claim 1 uses the term "kind" in reference to the rubber (claim 1, line 5), but not in reference to the thermoplastic. Therefore, it is unclear whether the claim is further limiting the thermoplastic or the rubber component.

Claim 6 recites the limitation "glass" in line 5. There is insufficient antecedent basis for this limitation in the claim. Although the preamble of claim 6 recites an insulated glass unit, the claim does not claim glass in the structure of the unit.

Claim Rejections - 35 USC § 102

6. Claims 1 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Peacock, USPN 5,502,112.

Art Unit: 1794

Peacock teaches a thermoplastic resin consisting essentially of a thermoplastic (polyethylene, col. 3, ln. 11), unvulcanized rubber (ethylene propylene rubber, col. 3, ln. 12), a moisture absorbent (alumina, col. 4, ln. 16), and antioxidant (col. 4, ln. 44). Peacock teaches the ratio of thermoplastic to rubber is between 2.5:1 (45%/20%; col. 3, ln. 14-15) to 3:4 (30%/40%; col. 3, ln. 14-15). Peacock teaches the content of the moisture absorbent is up to 100 parts by weight of the composition (col. 4, ln. 31). Therefore, Peacock teaches the moisture absorbent is between 0 and 85% (100 parts moisture absorbent/40 parts thermoplastic + 45 parts rubber; col. 3, ln. 14-15).

Although Peacock does not explicitly teach the moisture vapor permeability of the thermoplastic resin component, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of a disclosed material, i.e. high density polyethylene, col. 3, ln. 26-27). The burden is upon the Applicant to prove otherwise. MPEP 2112.

The examiner is interpreting the transitional phrase “consisting essentially of” as “comprising”. Please see Response to Arguments section below.

Regarding claim 4, Peacock teaches the composition is a spacer (molded article, col. 2, ln. 50). The examiner is not giving the preamble, “insulated glass unit” patentable weight with regard to structure. Therefore, the claim only claims a spacer.

Regarding claim 5, Peacock teaches the composition is a spacer that seals trash in a single place (trash can, col. 2, ln. 53).

Art Unit: 1794

7. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hazelton et al., USPN 4,607,074.

Hazelton teaches a thermoplastic resin composition comprising a thermoplastic resin (col. 3, ln. 25), at least one unvulcanized rubber (col. 3, ln. 26-28), a moisture absorbent (clay, col. 7, ln. 50), and antioxidant (col. 8, ln. 6). Hazelton teaches the unvulcanized rubber can be ethylene propylene rubber (col. 5, ln. 10-11). Hazelton teaches using two rubbers, one that is vulcanized and another one that is not (col. 8, ln. 65-68). Hazelton teaches the thermoplastic resin can be LDPE or LLDPE (col. 4, ln. 27). Hazelton teaches the moisture absorbent comprises up to 50% of the composition (col. 7, ln. 45).

Regarding the ratio of the thermoplastic to unvulcanized rubber, Hazelton teaches the composition comprises a polymer component, which is defined as the polyolefin plus the elastomers (col. 7, ln. 17). Hazelton teaches the thermoplastic is between 0 and 75% of the polymer component of the composition (col. 6, ln. 67). Hazelton teaches the unvulcanized rubber is between 5% and 80% of the polymer component of the composition (col. 7, ln. 26-27). Therefore, Hazelton teaches the ratio of thermoplastic to rubber is between zero and 15:1 (75%/5%).

Although Hazelton does not explicitly teach the moisture vapor permeability of the thermoplastic resin component, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of the claimed materials, i.e. low density polyethylene and linear low density polyethylene. The burden is upon the Applicant to prove otherwise. MPEP 2112.

The examiner is interpreting the transitional phrase “consisting essentially of” as “comprising”. Please see Response to Arguments section below.

Regarding claims 4 and 5, Hazelton teaches the composition is a spacer (gasket, col. 3, ln. 20). The examiner is not giving the preamble, “insulated glass unit” patentable weight with regard to structure. Therefore, the claims only claim a spacer.

8. Claims 1-2 and 4-12 are rejected under 35 U.S.C. 102(b) as anticipated by Baratuci et al., USPN 5,851,609.

Baratuci teaches a thermoplastic resin composition (core material, col. 6, ln. 65) comprising a thermoplastic resin (polyalphaolefin, col. 6, ln. 66), an unvulcanized rubber (isobutylene based polymer, col. 6, ln. 66), a moisture absorbent (desiccant, col. 7, ln. 7), and antioxidant (col. 7, ln. 5). Baratuci teaches the combination of polyalphaolefins and isobutylene rubbers are "often used" in weight ratios between 1:8 and 8:1 (col. 6, ln. 29-31). Baratuci teaches the moisture absorbent (desiccant) comprises between 5-50% of the thermoplastic resin composition (core material, col. 5, ln. 16-17).

Although Baratuci does not explicitly teach the moisture vapor permeability of the thermoplastic resin component, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of the claimed material, i.e. low density polyethylene, col. 5, ln. 53. The burden is upon the Applicant to prove otherwise. MPEP 2112.

Baratuci teaches the rubber component can be a copolymer of a halogenated isoolefin (halogenated isobutylene, col. 6, ln. 11-17) and para-methylstyrene (col. 6, ln. 16-17). Baratuci

Art Unit: 1794

does not expressly teach the rubber is unvulcanized. However, Baratuci does not teach a crosslinking agent or process that would lead to a vulcanized rubber. Therefore, the rubber taught in Baratuci is unvulcanized.

The examiner is interpreting the transitional phrase “consisting essentially of” as “comprising”. Please see Response to Arguments section below.

Regarding claim 2, Baratuci teaches the thermoplastic component can be low density polyethylene (col. 5, ln. 53).

Regarding claim 4, Baratuci teaches an insulated glass unit comprising a spacer (core material, fig. 7, # 24, col. 2, ln. 57-58) made of the composition of claim 1 (core material, see rejection of claim 1 above).

Regarding claims 5 and 6, Baratuci teaches the spacer also serves as a sealant (unitary spacer sealant strip, col. 4, ln. 5). Baratuci teaches adhesive layers between the thermoplastic resin (core material, fig. 7, #24) and glass (fig. 7, #22 and 23, col. 2, ln. 60-61).

Regarding claims 8, 10, and 11, Baratuci teaches the insulating glass unit comprises two glass plates (fig. 7, #22 and 23, col. 2, ln. 61), a spacer (fig. 7, #24), and an air layer (space between glass plates, fig. 7). Baratuci teaches the spacer seals the unit from outside air (col. 1, ln. 63-64).

Regarding claims 7, 9, and 12, Baratuci teaches a secondary seal (barrier film, fig. 3, #540, col. 2, ln. 41; and col. 8, ln. 33-38).

9. Claims 1-2, 6-8, and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Koizumi et al., USPN 6,491,992.

Art Unit: 1794

Regarding claim 1, Koizumi teaches a thermoplastic resin composition, consisting essentially of a thermoplastic resin having a moisture vapor permeability of 1.0×10^{-13} ($\text{cm}^3 \cdot \text{cm} / \text{cm}^2 \cdot \text{sec} \cdot \text{Pa}$) or lower (see calculation below, col. 4, ln. 7-9); a unvulcanized rubber (col. 9, ln. 26), which is a halogenated isoolefin/para-alkylstyrene rubber (*halide of paramethyl styrene-polyisobutylene*, col. 4, ln. 57); and a moisture absorbent (col. 6, ln. 20-21). Koizumi also teaches the weight ratio of the thermoplastic resin to the unvulcanized rubber is 85/15 to 15/85 (col. 5, ln. 14). Koizumi teaches the content of the moisture absorbent is 10 to 70 parts by weight to 100 parts by weight of the total of the thermoplastic resin and the unvulcanized rubber (col. 6, ln. 35-36). Koizumi teaches the thermoplastic resin composition can include a barrier resin (col. 6, ln. 42), an inorganic filler (talc, calcium carbonate, col. 7, ln. 43), a tackifier (col. 7, ln. 44), an age inhibitor (col. 7, ln. 44-45), heat stabilizer (col. 7, ln. 45), antioxidant (col. 7, ln. 45), softening agent (col. 7, ln. 45), processing aid (col. 7, ln. 45-46), as well as inorganic and organic pigments (col. 7, ln. 50-51).

Regarding the calculation of moisture vapor permeability, the Specification (page 62) defines the moisture vapor permeability with the following equation: Moisture vapor permeability ($\text{cm}^3 \cdot \text{cm} / \text{cm}^2 \cdot \text{sec} \cdot \text{Pa}$) = 1.744×10^{-14} x Moisture vapor transmission rate ($\text{g} / (\text{m}^2 \cdot 24\text{h})$) x thickness (mm). Koizumi teaches the thermoplastic resin has a water vapor permeability of $100 \text{ g} / (\text{m}^2 \cdot 24\text{h})$ or lower when the thickness of the thermoplastic resin is 30 micrometers (Col. 4, ln. 8-9). Therefore, Koizumi teaches a moisture vapor permeability of $5.232 \times 10^{-14} \text{ cm}^3 \cdot \text{cm} / (\text{cm}^2 \cdot \text{sec} \cdot \text{Pa})$ or lower. Calculation: MVP = 1.744×10^{-14} x $100 \text{ g} / (\text{m}^2 \cdot 24\text{h})$ x 0.03 mm.

The examiner is interpreting the transitional phrase “consisting essentially of” as “comprising”. Please see Response to Arguments section below.

Regarding claim 2, Koizumi teaches the resin can be low density polyethylene (col. 4, ln. 14).

Regarding claims 4 and 5, Koizumi teaches using the thermoplastic composition as the sealing material (col. 11, ln. 2-3) and spacer (Fig. 1(a), # 3, col. 11, ln. 13-14) in an insulated glass unit (insulating glass, col. 11, ln. 1).

Regarding claims 6 and 7, Koizumi teaches an insulating glass unit (insulating glass, col. 11, ln. 1) comprising: a spacer (Fig. 1(b), # 3, col. 11, ln. 41), which is made of the thermoplastic resin composition (col. 11, ln. 1-3) and serves as a sealant (col. 11, ln. 32-33). Koizumi also discloses adhesive layers (claim 6) or secondary seal (claim 7) between the thermoplastic resin composition and glass (Fig. 1(b), # 4, col. 11, ln. 41).

Regarding claim 8, Koizumi teaches the insulated glass unit (insulating glass, col. 11, ln. 1) includes two glass plates (Fig. 1(a), #1a and #1b, col. 11, ln. 33-34), with the thermoplastic spacer between the plates (Fig. 1(a), #3, col. 11, ln. 7), and an air layer formed between the two glass plates (air layer, Fig. 1a, #2, col. 11, ln. 9-10).

Regarding claim 10, Koizumi teaches an insulated glass unit (insulating glass, col. 11, ln. 1) comprising two glass plates (Fig. 1(a), #1a and #1b, col. 11, ln. 33-34), a thermoplastic spacer between the sheets (Fig. 1(a), #3, col. 11, ln. 13-14) that serves as the sealant (col. 11, ln. 2-3), and creates an air layer between the sheets (air layer, Fig. 1a, #2, col. 11, ln. 9-10). Koizumi also teaches the spacer maintains the glass plates at a predetermined distance (col. 11, ln. 10).

Regarding claim 11, Koizumi teaches an insulated glass unit (*insulating glass*, col. 11, ln. 1) comprising: two glass plates (Fig. 1(b), #1a and 1b, col. 11, ln. 42), the spacer between the glass sheets that serves as the sealant (Fig. 1(b), #3, col. 11, ln. 41-42), an adhesive between the glass plates and the spacer (Fig. 1(b), #4, col. 11, ln. 44-45). Koizumi also teaches the spacer maintains the glass plates at a predetermined distance (col. 11, ln. 10).

Claim Rejections - 35 USC § 103

10. Claims 1-2 and 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baratuci et al., USPN 5,851,609, in view of Koizumi et al., USPN 6,491,992.

Baratuci is relied on as above regarding the thermoplastic composition, spacer, and structure of the insulated glass unit. However, if the thermoplastic resin of claim 1, line 3, as taught in Baratuci does not possess the claimed property, then the claims are obvious over Baratuci in view of Koizumi.

Koizumi is drawn to a thermoplastic sealant composition for an insulated glass unit (Abstract). Koizumi teaches the thermoplastic composition comprises a thermoplastic resin with a moisture vapor transmission rate of $5.232 \times 10^{-14} \text{ cm}^3 \cdot \text{cm} / (\text{cm}^2 \cdot \text{sec} \cdot \text{Pa})$ (see calculation above in rejection of claim 1 over Koizumi). Koizumi teaches polyolefin based resins result in a thermoplastic composition having a reduction in water vapor permeability (col. 4, ln. 45-46).

Where the general conditions of a claim are disclosed in the prior art, discovering the optimum ranges in moisture vapor permeability involves only routine skill in the art, absent a showing of criticality. MPEP 2144.05 II. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the moisture vapor transmission rate of the thermoplastic

Art Unit: 1794

resin, as taught in Koizumi, to obtain a thermoplastic resin having a thermoplastic resin with a moisture vapor permeability of $5.232 \times 10^{-14} \text{ cm}^3 \cdot \text{cm}/(\text{cm}^2 \cdot \text{sec} \cdot \text{Pa})$ or less. Additionally, one of ordinary skill in the art would have been motivated to use a thermoplastic resin with a $5.232 \times 10^{-14} \text{ cm}^3 \cdot \text{cm}/(\text{cm}^2 \cdot \text{sec} \cdot \text{Pa})$ or less because it results in a thermoplastic resin having a reduction in water vapor permeability (Koizumi, col. 4, ln. 45-46).

The rejections of claims 2, and 4-12 are relied upon as above.

11. Claims 7, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al., USPN 6,491,992 in view of Bowser, USPN 4,622,249.

Koizumi is relied on as above regarding the section 102 rejection.

Regarding claims 7, 9, and 12, Koizumi does not teach an insulating glass unit with a secondary seal.

Bowser is drawn to an insulated glass unit (*multiple pane unit*, Abstract) comprised of two spaced apart sheets of glass (Fig. 1, Ref. Nos. 22 and 24, col. 4, ln. 4). Bower teaches a sealing assembly maintains the sheets in a spaced apart relationship (Col. 4, ln. 5-6). Bowser teaches the sealing assembly comprises an inner and outer element (Col. 4, ln. 34). The outer element in Bowser is the structural equivalent to the secondary sealant claimed (Bowser, Fig. 1, Ref. No. 36). Bowser teaches using both a primary and secondary sealant aids in evenly distributing loads (e.g. wind loads, static loads, thermal loads, mechanical stresses) between two sealants (Col. 3, ln. 51-52). Bowser teaches distributing the loads extends the useful life of the insulated glass unit and enhances its performance by minimizing the probability of forming disuniformities in the thickness of the air space during the life of the unit (col. 3, ln. 56-60).

Furthermore, the specification (p. 2, first paragraph) discloses a conventional insulating glass unit (Drawings, fig. 5) “generally has a structure” including a secondary sealant (Specification, p. 2, first paragraph, line 8).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a secondary sealant, as taught by Bowser and disclosed as generally known in the art, in the insulated glass unit taught in Koizumi, to obtain an insulated glass unit with a thermoplastic spacer and a secondary sealant. One of ordinary skill in the art would have been motivated to use a secondary sealant in an insulated glass unit because using a secondary sealant aids in extending the useful life and performance of the insulated glass unit (Bowser, col. 3, ln. 59-60).

Response to Arguments

12. Applicant's arguments filed 11/16/2009 have been fully considered but they are not persuasive.

Applicant's arguments focus on whether the prior art teaches a vulcanized rubber. Applicant attempts to distinguish the claimed invention by amending claim 1 from comprising to consisting essentially of. Applicant argues consisting essentially of removes a crosslinking agent from the composition (p. 7, para 3).

Although the transitional phrase “consisting essentially of” limits the scope of a claim to the specified materials “and those that do not materially affect the basic and novel characteristic(s) of the claimed invention”, **absent a clear indication** in the specification or claims of what the basic and novel characteristics actually are, “consisting essentially of” will be

Art Unit: 1794

construed as equivalent to “comprising.” MPEP 2111.03. In this case, the opposite situation exists – the specification clearly indicates a vulcanizing agent can be present in the composition.

The specification indicates the presence of a crosslinking agent in two independent forms. First, the specification states the thermoplastic composition can contain “one or more additives as described below” (p. 21, paragraph 4). One additive is a “cross-linking agent” (p. 21, paragraph 5, line 2). Second, the claim 1 includes inorganic filler. The specification teaches the inorganic filler can be zinc oxide (Specification, p. 31, para 3, ln. 4-5). Koizumi teaches zinc oxide is the vulcanizing agent (Koizumi, col. 8, ln. 56; and Examples 1-10, Table 1). Since the specification clearly indicates the presence of a crosslinker, the “basic and novel characteristics of the invention” cannot be the lack of a crosslinker. Therefore, the phrase “consisting essentially of” is interpreted as comprising with respect to a crosslinking agent.

Since the specification clearly contemplates using a crosslinker in the composition, Applicant attempt to distinguish Koizumi by arguing Koizumi vulcanizes the thermoplastic resin are not persuasive. The fact that Koizumi teaches a method of processing the composition, such that the rubber component is vulcanized and then incorporated into an insulated glass unit, is immaterial to the claims as written. Furthermore, absence a showing of criticality a change in the sequence of adding ingredients is *prima facie* obvious. MPEP 2144.04 IV C.

Regarding an insulated glass unit “made of” the composition of claim 1 (i.e. claims 4-12): The claims claim an insulated glass unit with a spacer “made of” the thermoplastic resin composition of claim 1. The Merriam Webster Dictionary defines made as “put together of various ingredients”. Therefore, the claimed composition with an added vulcanizing agent is put together of various ingredients, including the composition of claim 1 and a vulcanizing agent.

Art Unit: 1794

The claims do not claim that the rubber component in the thermoplastic resin composition is never vulcanized. Therefore, Koizumi teaches an insulated glass unit with a spacer “made of” the thermoplastic resin composition of claim 1.

13. In the alternative, Applicant's arguments with respect to claims 1-2 and 4-12 are moot in view of the new grounds of rejection.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WALTER MOORE whose telephone number is (571) 270-7372. The examiner can normally be reached on Monday-Thursday 9:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WM/

Walter Moore, Examiner AU 1794
12/17/2009

/Alicia Chevalier/

Primary Examiner, Art Unit 1794